

IBM i Migrate While Active - Why take your system down to migrate?

Tim Rowe

Explore.
Build.
Launch.

GO/



Agenda

- 01 The Challenge
- 02 MWA Product Overview
- 03 Assisted Save/Restore
- 04 Partition Mirror
- 05 Details



Understanding the Challenge

Number 1 most asked question:

Can I send my IBM i save tapes to PowerVS?

Answer:

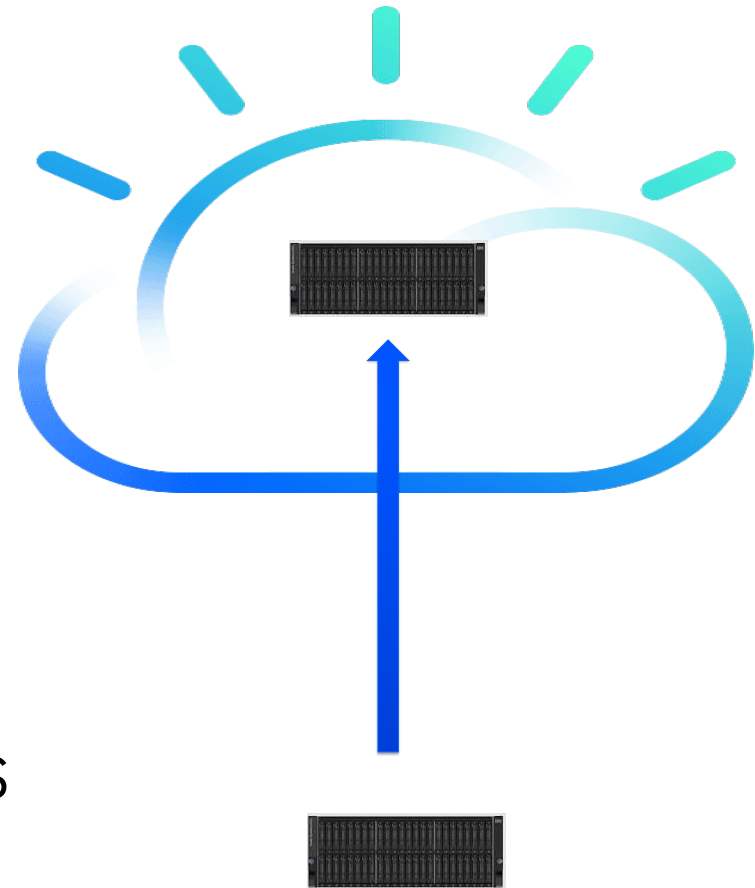
No, there are no physical tape drives in PowerVS



Understanding the Challenge

Number 2 most asked question:
Can I replicate my storage controller to PowerVS?

Answer:
No, currently there is no support to replicate from on-prem to PowerVS at the storage controller layer



Understanding the Challenge

- Can I save directly to the Cloud VTL?
No, the latency is too great to achieve any type of throughput.
- Can I boot from my save media?
No, you have to first do a network install of the base OS from a running IBM i.
- Can I use tape for the entire system install:
No, you have to use virtual optical for the base and optionally tape for the user data.



The screenshot shows the 'Configure Network settings' window in the IBM i activation wizard. The window is titled 'Activate [Partition-202411070115-861]' and has tabs for 'Activation' and 'Network Settings'. The 'Network Settings' tab is selected. The window contains the following fields and options:

- Configure Network settings**
Configure the network boot settings for the IBM i partition.
- Select Network Boot Option:**
☐ NFS Optical ☒ iSCSI Tape
- Select IP Address Protocol:**
☒ IPv4 ☐ IPv6
- Server:**
 - Target IP Address:
 - Target Name:
 - Initiator Name:
 - Target Port:
 - CHAP Name:
 - CHAP Secret:
- Partition:**
 - Network Adapter:
 - IP Address:
 - Subnet Mask:
 - Gateway:

A large blue prohibition sign is overlaid on the form, indicating that the configuration is not recommended or supported.

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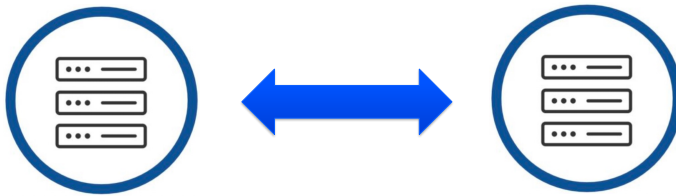


The Db2 Mirror for i Family



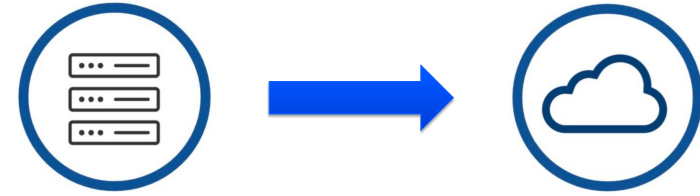
Base Product (5770- DBM 5050)

- No Charge
- GUI Support
- Application Evaluation



Option 1 – Continuous Availability (5101)

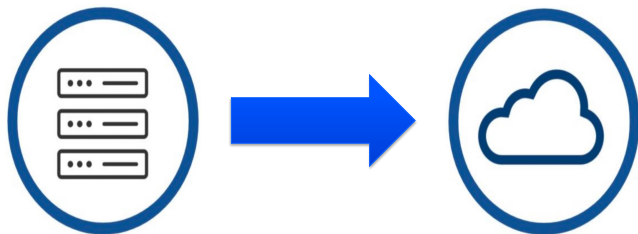
- Licensed per core on both nodes
- Requires RoCE RDMA adapters
- Bi-directional synchronous replication
- Limited to distances less than 10 km
- Rolling upgrades
- Can help provide a near 0 downtime environment for IBM i applications



Option 2 – Migrate While Active (5102)

- Licensed per core on the source node
- Uses a TCP/IP connection
- One direction asynchronous replication
- No physical limitation on distance, but cutover outages are dependent on bandwidth and latency.
- **NOT a Disaster Recovery Product**

Zero Planned Down Time for IBM i with Db2 Mirror MWA



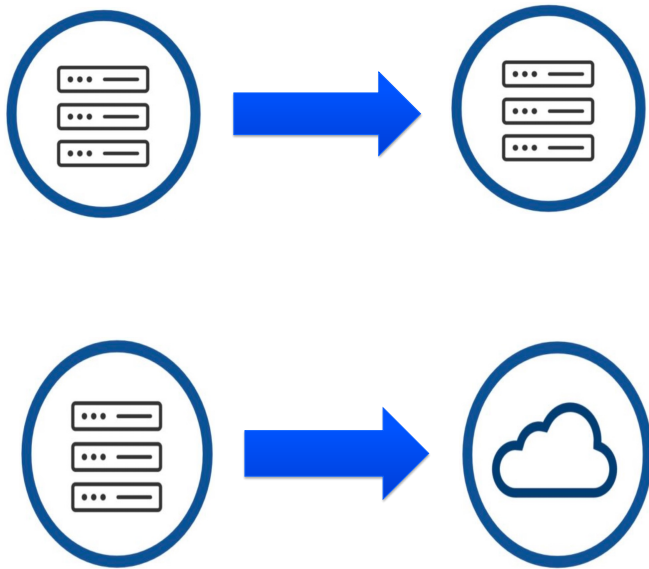
Minimize Downtime

Migrate While Active – Assisted S/R

- Assisted S/R guides you through the S/R process to be able to restore on PowerVS
- After the save, delta objects are tracked to be synced after the restore of the target

-
- **All Storage Architectures:** No dependency on external storage, VIO or HMC
 - **Preset S/R Procedure:** Special procedure designed for target environments that can't D-Mode off of tape
 - **Track Changes:** Track changes while the system is being transferred and restored.
 - **Business Continuity:** Sync changes while the business continues.

Zero Planned Down Time for IBM i with Db2 Mirror MWA



No Downtime

New Migrate While Active – Partition Mirror

- Partition Mirror your source system while it is running to either a new Power Server or IBM Cloud
- Cutover is a simple IPL of the target partition

-
- **All Storage Architectures**: No dependency on external storage, VIO or HMC
 - **No Save / Restore**: Similar to full system storage replication
 - **Test Copy System**: Detach mirror, test the copy and resync from the source system
 - **P11 migration tool**: Available on IBM i 7.4. (7.5 coming soon)

Choices

Configure New Pair

Select the type of pair to configure.

☐ **Db2 Mirror**
IBM i continuous availability solution using real time synchronization between a 2 node pair

☒ **IBM i Migrate While Active**
Migration of an IBM i node from one location to another while continuing to use the source node

Partition migration methods

☒ **Assisted Save and Restore**
Assisted migration using save media (e.g., Optical, Tape)

☐ **Partition Mirroring**
Host-based storage replication over a network connection

Partition Mirror

- Your system is at 7.4 (7.5 coming soon)
- Only supports SYSBAS, no IASPs allowed
- Depending on change rate, bandwidth and size of system you can wait for the initial sync.
- You have a requirement for a pre-test before cut over

Assisted Save and Restore

- You have a system at 7.5
- You have a large system that doesn't really change. ie greater than 40 TB but only changes a few TB per week.
- Have on on-prem VTL to save to that can replicate to the target.
- Your system has IASPs

Agenda

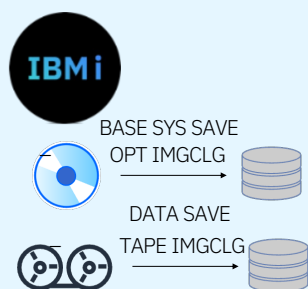
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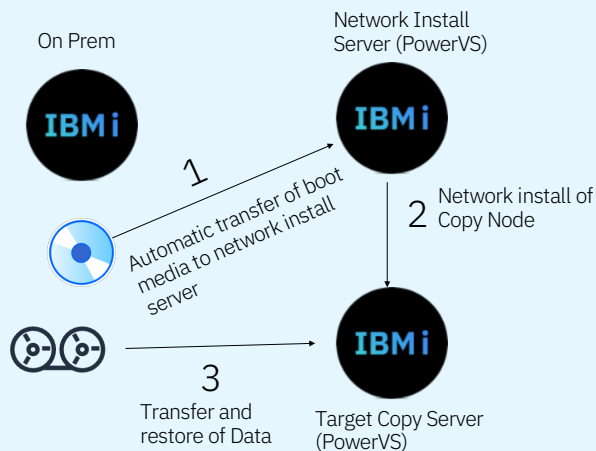
IBM i Migrate While Active

Step 1: Initial System Save

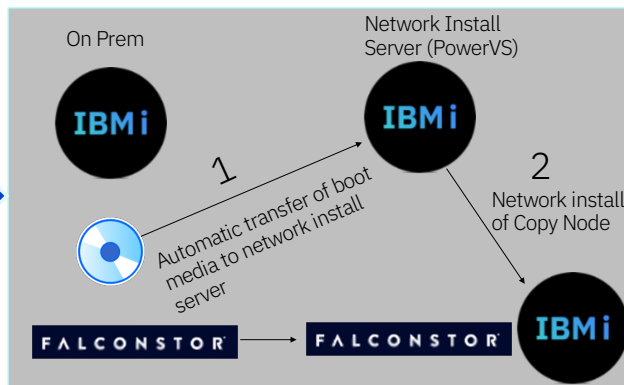
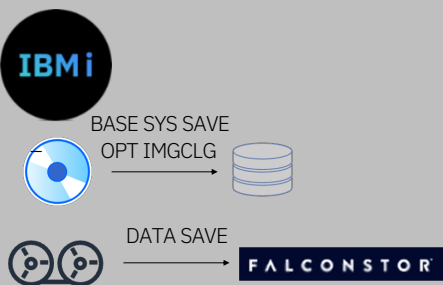
Pattern 1. Using IBM i Local Storage



Step 2: Transfer SAVE to PowerVS



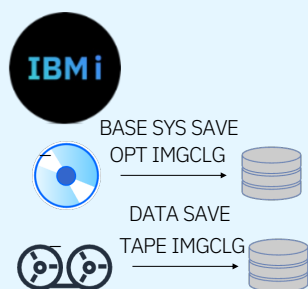
Pattern 2. Use VTL for DATA SAVE



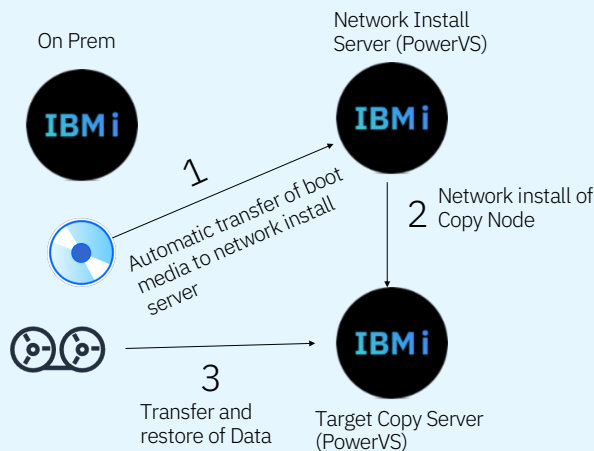
IBM i Migrate While Active – Assisted Save/Restore

Step 1: Initial System Save

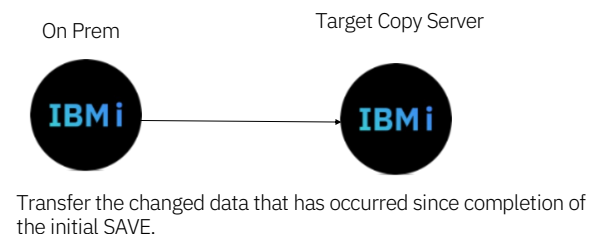
Pattern 1. Using IBM i Local Storage



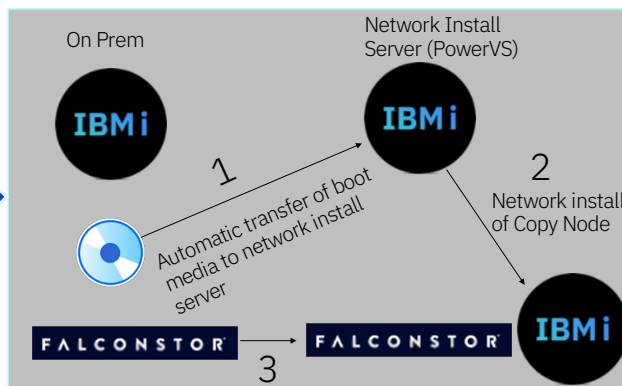
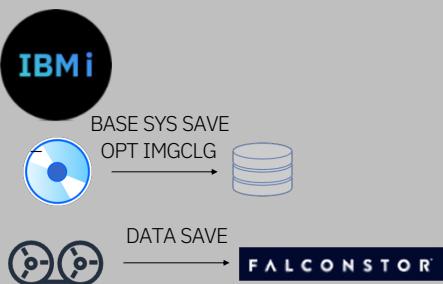
Step 2: Transfer SAVE to PowerVS



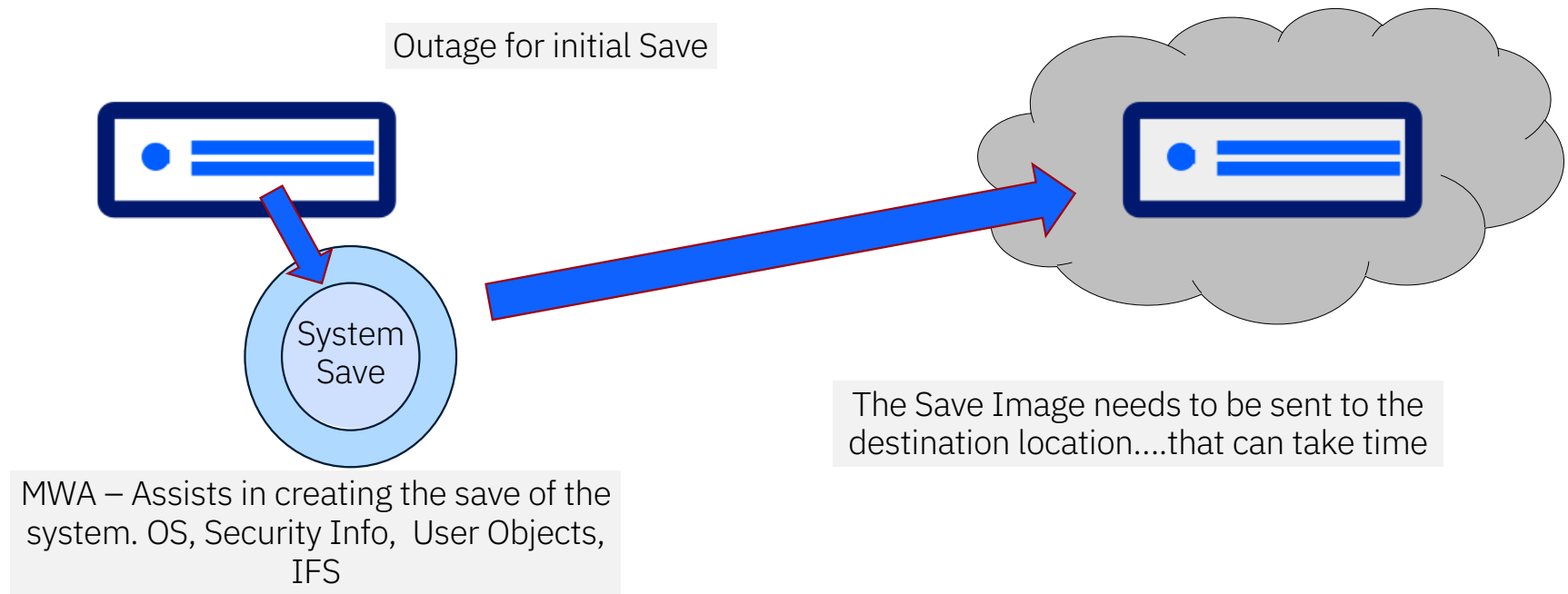
Step 3: Transfer Changed Data



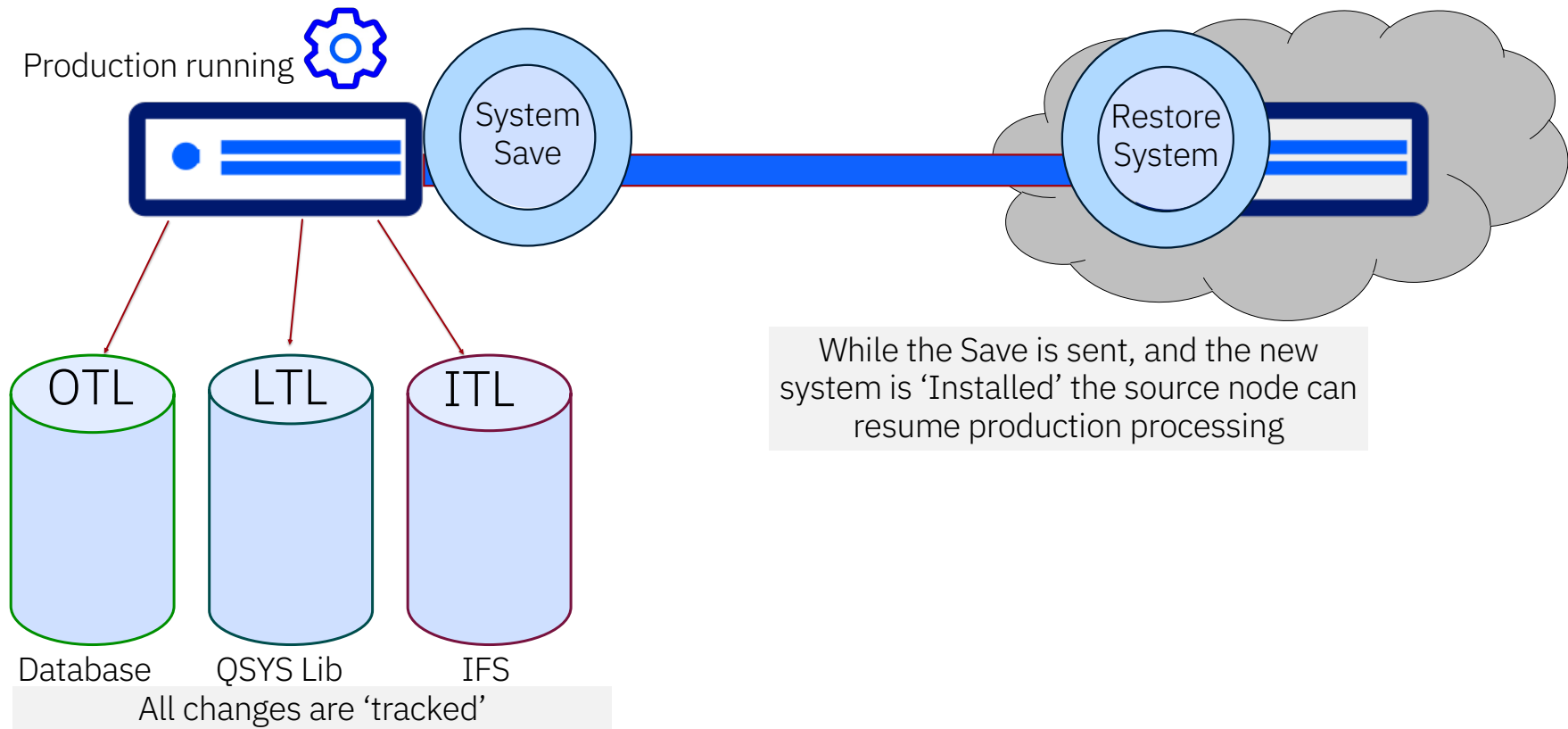
Pattern 2. Use VTL for DATA SAVE



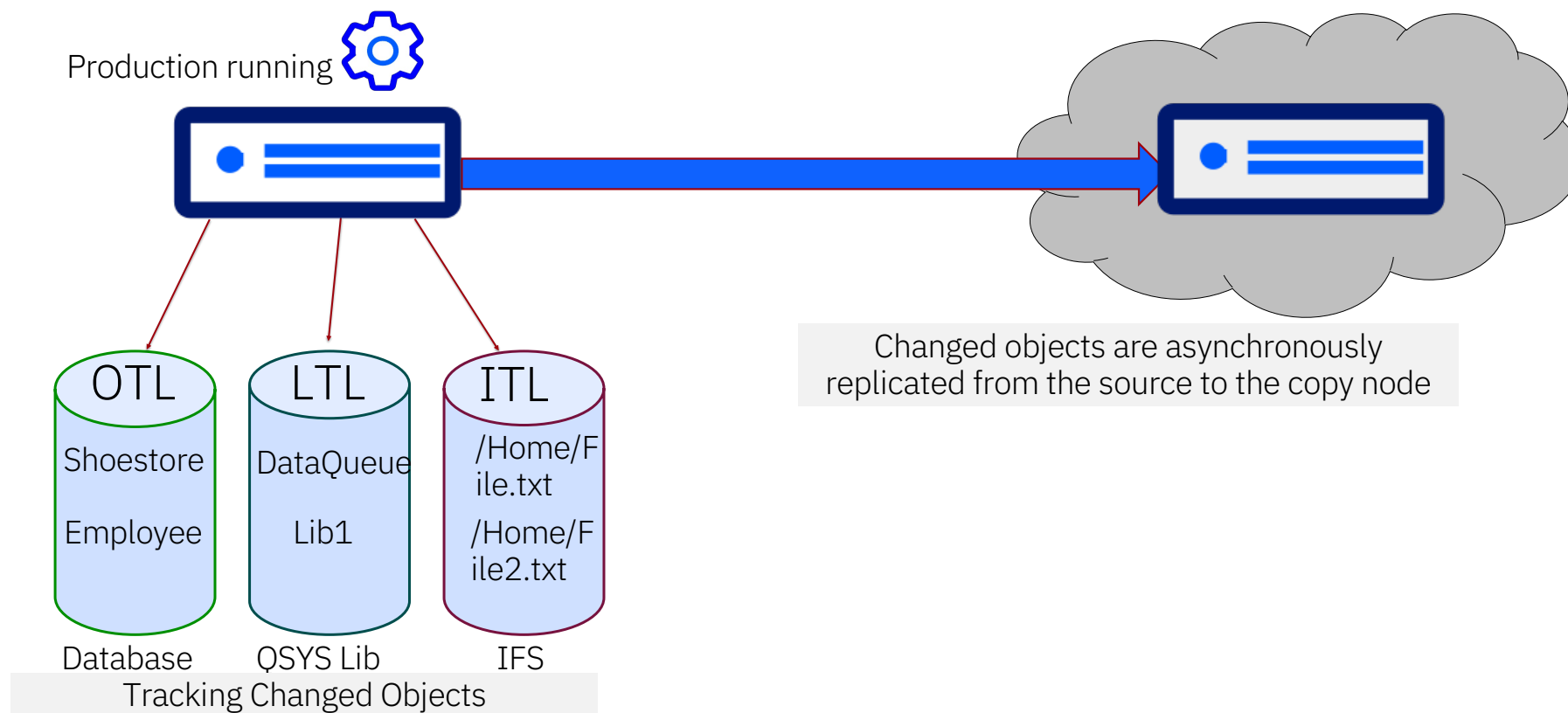
Migrate While Active



Migrate While Active



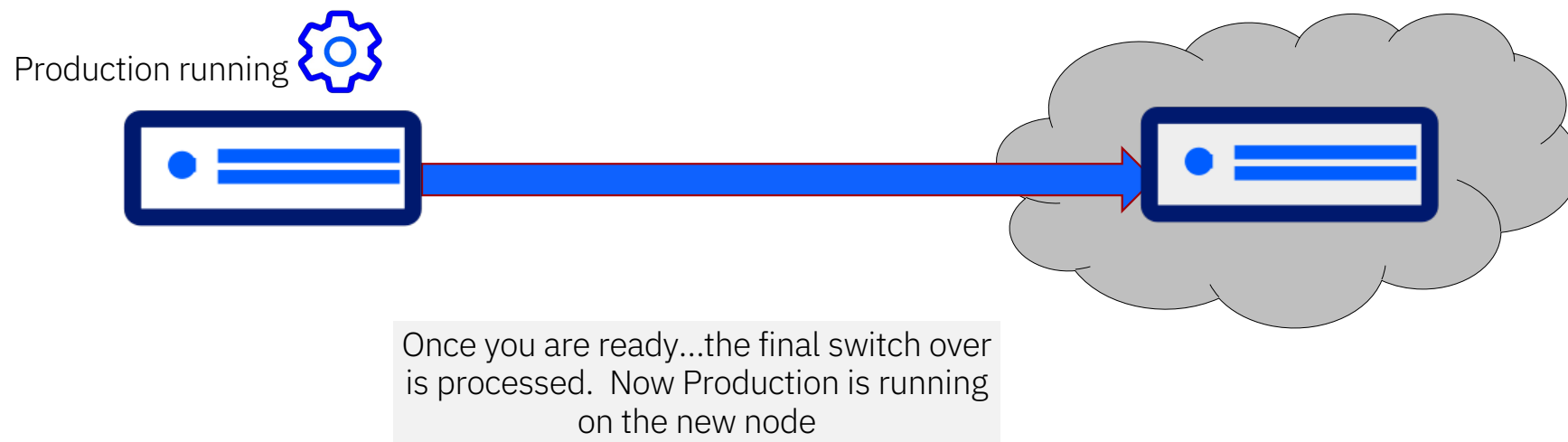
Migrate While Active



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Migrate While Active



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IBM i Migrate While Active – Partition Mirroring

Easily migrate from on-prem to PowerVS or to a new Power Server on-prem

- **No Save / Restore** technology needed
- **Production downtime** eliminated on the setup, reduced to an IPL on the cutover.
- **Production on-prem remains available** while changes are sent asynchronously to the copy node
- Similar to **full system storage replication**



Establish
network
connectivity
between source
and target



Target instance
only needs DST
and a Service
LAN connection

```
Configure Service Tools Server LAN Adapter
System: MMACPY1
Type choices, press Enter to verify input.
Resource name . . . . . : CMN07      VLAN ID 0 (0 is default)
Adapter type . . . . . : 268C
Adapter model . . . . . : 002
Adapter serial number . . . : 00-D0000A0

Host name for service tools . 78937E0L21
Node . . . . . : 000000000000 (0 is default)
Duplex . . . . . : AUTO        HALF, FULL, AUTO
Network speed . . . . . : AUTO   AUTO, 10, 100, 1000, 10G, 40G

IP version allowed . . . . . : BOTH      IPV4, IPV6, BOTH
Internet address . . . . . : 172.111.111.64
Gateway router address . . . : 172.111.111.1
Subnet mask . . . . . : 255.255.255.0

IPV6 address . . . . . :
IPV6 interface ID . . . . . : 0000000000000000 (0 is default)

F3=Exit      F5=Load      F6=Clear  F7=Store  F12=Cancel
F13=Deactivate F14=Activate F17=Deactivate followed by activate
Warning: Selected resource is not full LAN console capable.
MA J 04/054
```

Install Migrate While Active on the source.

Configure New Pair

Select the type of pair to configure.

☐ Db2 Mirror
IBM i continuous availability solution using real time synchronization between a 2 node pair

☒ IBM i Migrate While Active
Migration of an IBM i node from one location to another while continuing to use the source node

Partition migration methods

☐ **Assisted Save and Restore**
Assisted migration using save media (e.g., Optical, Tape)

☒ **new** **Partition Mirroring**
Host-based storage replication over a network connection

Next

Let the mirroring begin



IBM i Migrate While Active - Partition Mirroring

Source Authentication

Copy Node Setup

Data Replication

Copy Node Options

Data Replication

View data replication status before choosing test mode or final cutover

Copy node preparation

Data Remaining: 5370 GB State: Active

Complete: 100% Duration: 10080 mins [Pause](#) [Refresh](#)

Continuous data replication [View details](#)

Replication rate is set to: High Medium ☒ Low Avg transfer rate in last 10 secs is 20Mbps

Data Remaining: 5370 GB State: Active

Transfer rate: 150 Mbps

Complete: 75% Duration: 10080 mins [Pause](#) [Cancel](#)

Choose to test your copy before cutting over

Copy Node Options

Copy node options are available when data replication is active

Test mode ☐

Use test mode to validate the copy node can run workloads successfully. Data replication is temporarily paused and the copy node is started. Production workloads can optionally continue running on the source node.

Final cutover node configuration ☐

Confirm and finalize the network attributes for the copy node before completing the final synchronization and migration. When complete, the copy node is running the production workloads.

Input the info for the new test system

Copy node configuration details for test mode

[View source\(ZZ2p28\)](#)

System Name: ⓘ

Host Name: ⓘ

Domain Name:

DNS Servers:

- | +

Copy node network details for test mode

[View source\(ZZ2p28\)](#)

Test mode IP address ⓘ

IP Address	Line Descripti... ⓘ↓	Communication port	Subnet Mask	Gateway
		Select ▼		

Additional test mode network configuration ⓘ

🔍 Search input text

Delete

Add new IP

<input type="checkbox"/> IP Address	Line Description	Communication port	Subnet Mask	Gateway
NO IP Address groups created				
Click on the Add new IP button to add IP Address				

Replication is paused, not your production and the test instance is brought online

```
Work with System Activity                                05/18/25  MWASRC2 20:13:59
Automatic refresh in seconds . . . . . 5
Job/Task CPU filter . . . . . 10
Elapsed time . . . . . 00:00:02 Average CPU util . . . . . 1.0
Virtual Processors . . . . . 4 Maximum CPU util . . . . . 2.5
Overall SQL CPU util . . . . . .0 Minimum CPU util . . . . . .0
Average CPU rate . . . . . 150.0 Current processing capacity: 4.00

Type options, press Enter.
1=Monitor job 5=Work with job

Opt Job or Task User Number Thread Ptu CPU Util Total Sync Total Async SQL CPU
- ADMIN3 QMBADMIN 202236 00000655 25 .3 0 0 .0
- QZDASOINIT QUSER 202319 00000002 20 .2 14 14 .0
- QTSMTPLCLTD QTCP 202199 00000002 50 .0 16 4 .0
- QZS0SIGN QUSER 202316 00000003 20 .0 16 2 .0
- DSP01 MWAUSER 202237 00000002 1 .0 1 0 .0
- QZS0SGND QUSER 202195 00000001 20 .0 4 0 .0
More...

F3=Exit F10=Update list F11=View 2 F12=Cancel F19=Automatic refresh
F24=More keys
(C) COPYRIGHT IBM CORP. 1980, 2021.
MA E MW 15/003
```

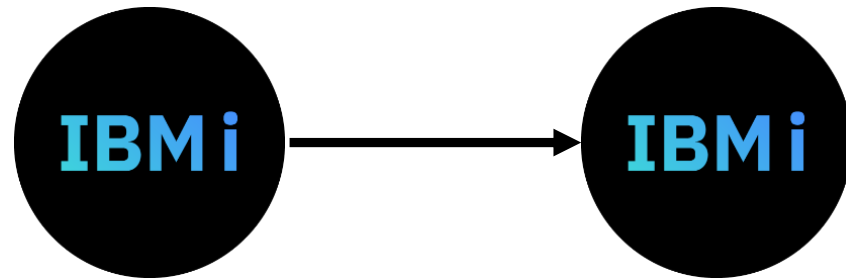
```
Sign On
System . . . . . MWACPY2
Subsystem . . . . . QBASE
Display . . . . . QPADEV0001

User . . . . .
Password . . . . .

Program/procedure . . . . .
Menu . . . . .
Current library . . . . .

(C) COPYRIGHT IBM CORP. 1980, 2021.
MA C 06/053
```

After testing,
resync changes
from the
production
instance



Choose to do the final cutover

Copy Node Options

Copy node options are available when data replication is active

Test mode ☐

Use test mode to validate the copy node can run workloads successfully. Data replication is temporarily paused and the copy node is started. Production workloads can optionally continue running on the source node.

Final cutover node configuration ☐

Confirm and finalize the network attributes for the copy node before completing the final synchronization and migration. When complete, the copy node is running the production workloads.

Input final cutover system details and bring up the new instance

Import cutover details

☒ Import system name and IP addresses from source node

☐ Use system name and IP addresses from test mode

Copy node configuration details for final cutover

System Name: ⓘ

Host Name: ⓘ

Domain Name:

DNS Servers:

-

|

+

Copy node network details for final cutover

Copy node IP address ⓘ

IP Address	Line Description	Communication port	Subnet Mask	Gateway
		Select ▾		

Additional network configuration ⓘ

Search input text

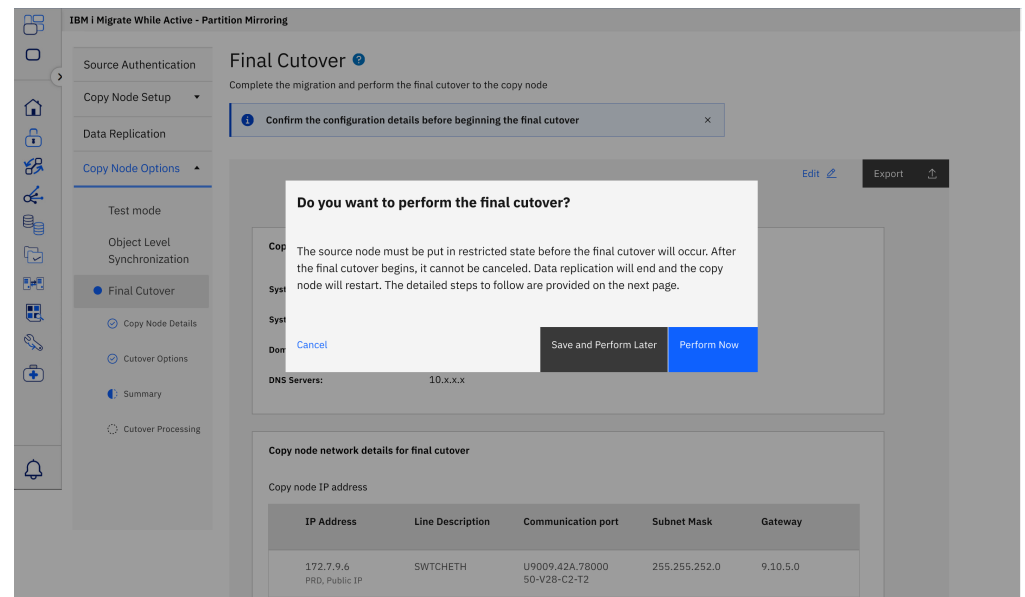
Delete

Add new IP

<input type="checkbox"/> IP Address	Line Description	Communication port	Subnet Mask	Gateway
-------------------------------------	------------------	--------------------	-------------	---------

Copy is IPLed and configured with the user inputs.

Source is brought to restricted state.



Agenda

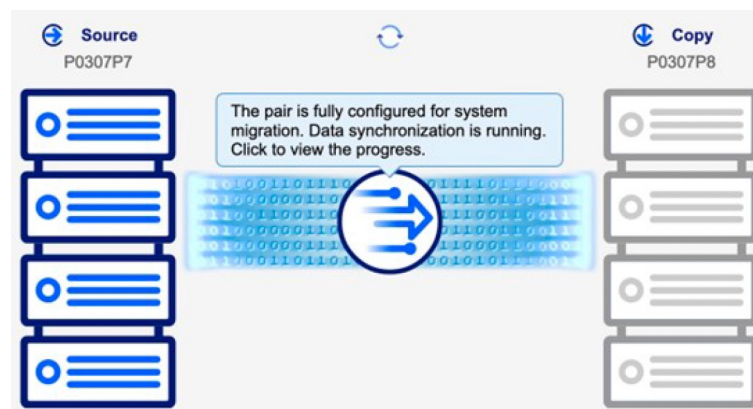
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IBM i Migrate While Active Pricing and PIDs

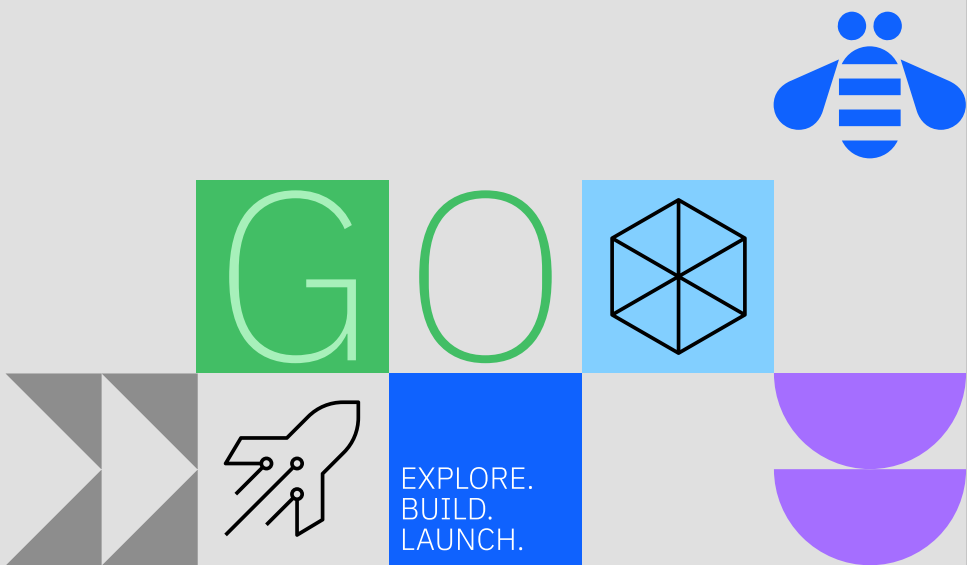
	Subscription Term – Migration Feature	eConfig Details
Db2 Mirror for i 7.4,7.5 or 7.6	5770-DBM License & SWMA combined	5770-DBM: license PID Installed as option 5102
Per core pricing	90 day or 1/2/3/4/5 year terms Price per core: Same price for all systems One price \$2140/core/year 90 days: \$749/core	Subscription PIDs: 5666-MSL: 90 days 5661-MSL: 1 year 5662-MSL: 2 year 5663-MSL: 3 year 5664-MSL: 4 year 5665-MSL: 5 year

IBM i Migrate While Active



- **Product Page:**
<https://www.ibm.com/support/pages/ibm-i-migrate-while-active>
- **IBM i 7.4 and 7.5**
- **New Book:**
<https://www.ibm.com/docs/en/i/7.4?topic=availability-i-migrate-while-active>
<https://www.ibm.com/docs/en/i/7.5?topic=availability-i-migrate-while-active>

Thank you



Firstname Lastname
Company, Job Title
Contact Info

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